Characteristics and dispositional determinants of psychiatric emergencies in a University Hospital in Beirut

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ABSTRACT

Mental health problems are common in Lebanon, and so are psychiatric emergencies. In order to show the characteristics of psychiatric emergencies in Lebanon along with their dispositional determinants, we conducted this retrospective, single-center, chart-review study of patients who presented to the Emergency Department between July 1, 2016 until December 31, 2016 and required an official psychiatrist consultation. Our sample included 195 patients of all age groups. The most common diagnosis was depression (75 patients) followed by anxiety (61 patients). 107 patients (54.8%) required admission for adequate treatment; however only 72 (67.3%) of those were actually admitted, and the rest (32.7%) left the hospital against medical advice. Increased hospital admission was associated with being a female (OR = 3.042), having family history of psychiatric disease (OR = 2.040) and having suicidal ideations (OR = 12.949). In a country that has inadequate health coverage, financial coverage can also be a determining factor in whether or not patients get the admission they need.

1. Introduction

Mental health problems represent 12% of the global burden of disease, a number that is anticipated to rise to 15% by 2020 (Dixon et al., 2006). Worldwide, a quarter of all "years-lived-with-disability" are attributable to neuropsychiatric conditions; which also represent a third of all disability-adjusted-life years among non-communicable diseases (Prince et al., 2007).

In Lebanon, a national study published in 2008 found that one in four adults is affected by at least one mental disorder over the course of their lives (Karam et al., 2008). Specifically the 12-month prevalence of mental health disorders in Lebanon is 17% (Karam, et al., 2006). Moreover, there is a shortage of treatment delivery as only 10.9% of people with mental illness in the past year in Lebanon have received treatment; there is a significant delay in time to receiving care as well (Karam et al., 2006, 2008).

In the United-States (US), there has been a year on year increase in emergency department (ED) presentations related to psychiatric emergencies. In 2000, the estimated number of psychiatry-related visits to the ED was 21 visits per thousand adults accounting for 5.4% of all ED visits. The most common mental health complaints being drug and alcohol-related (Hazlett et al., 2004).

Disposition of these patients may happen through either an emergency medicine physician after an appropriate examination or through a psychiatric clinician; and may be categorized as follows: admission to a psychiatric in-patient unit, or discharge with or without outpatient psychiatric follow-up (Garbrick et al., 1996).

Psychiatric assessment in the ED and the resulting clinical decision have important repercussions, both psychological and financial on patients, their families and the community (Drescher et al., 2015; Way and Banks, 2001). The consequences of untimely discharge of patients may include undertreatment of a serious disease with the possibility of a heightened risk of suicide, a decline in functioning or worsening of symptoms, and the potential for violence (Drescher et al., 2015; Gerson and Bassuk, 1980). On the other hand, inappropriate hospitalization may be stigmatizing, especially in the Lebanese culture, and can be a waste of resources and a financial burden on patients and their community (Drescher et al., 2015; El Majzoub et al., 2018; Stroul, 1988).

To our knowledge, there are no available studies in the literature that evaluate characteristics or dispositional determinants of psychiatric emergencies in Lebanon. This paper aims to identify the characteristics of psychiatry-related visits presenting to the ED of the American University of Beirut Medical Center (AUBMC), a tertiary care center in Beirut and the busiest in the Lebanese capital, as well as to

analyze the determinants of patient disposition.

2. Methods

2.1. Study design and setting

This was a retrospective, single center, chart review study conducted in the Emergency Department of the American University of Beirut Medical Center, a tertiary care center in the capital of Lebanon. The study involves all emergency department visits for patients with a psychiatric chief complaint requiring a formal psychiatric consultation over a six-month period (from July 1, 2016, until December 31, 2016).

Institutional review board of the American University of Beirut approved this study. To secure confidentiality, all identifying information of participants, including name, medical and contact information, as well as all data collected was kept in a password-protected computer that is kept secure. Data access is limited to the principal investigator and researchers working directly on the study. All data will be destroyed responsibly after the required retention time of 3 years. The biostatistician was provided with a de-identified data set.

2.2. Study population

The sample included 195 ED visits involving patients of all age groups. All visits involving patients presenting with psychiatric chief complaints requiring a formal psychiatry consultation at any time of the day during the study period were included.

The Medical Record Numbers (MRNs) of all patients requiring a formal psychiatry consultation in the ED were collected from logs of psychiatry residents who assess patients in the ED. Chart reviews from the medical records took place according to these patients' MRNs. Data collected included demographic characteristics, previous medical and psychiatric history, and the patient's emergency presentation and dispositional decision.

The dispositional decision would either be discharge with or without outpatient follow-up or admission. The decision to admit would be either to admit for psychiatric care, admit for medical care, admit for both psychiatric and medical care, or transfer to another hospital.

2.3. Statistical analyses

Categorical variables were summarized by calculating the frequencies and percentages, whereas the continuous variables were summarized as a median and interquartile range. Bivariate comparisons of clinical, demographic and outcome variables were done with Pearson's Chi-square or Fisher's exact tests as appropriate and a p-value < 0.05 was used to interpret these tests. A multivariate analysis using a backward selection procedure, with significance level for removal from the model set at 0.1, was conducted to identify the best model that explains the association between the disposition of the patients (discharged vs. admitted) and all variables found to be significant in the bivariate analysis. All statistics were done in SPSS 24.0.

3. Results

The total number of ED visits requiring a formal psychiatry consultation in the six-month period was 195 out of a total of 28,930 ED visits (6.7 per thousand ED visits). Table 1 outlines the demographic

Table 1
Demographic characteristics of patients presenting with psychiatric emergencies. * Other countries included: Egypt, Ethiopia, Iraq, Jordan, Kuwait, Saudi Arabia, Syria, and USA. ** Self-payers refers to patients with no insurance coverage or patients whose insurance did not cover the ED admission. ***NSSF is the Lebanese National Social Security Fund, a governmental basic insurance program. ****HIP (Health Insurance Plan) is the insurance used by the American University of Beirut community.

		N (%)
Age	≤ 18 years	14 (7.2)
	≥ 19 years	181 (92.8)
Gender	Male	66 (33.8)
	Female	129 (66.2)
Marital Status	Single	95 (48.7)
	Divorced	17 (8.7)
	Married	81 (41.5)
	Unknown/Not available	2 (1)
Children	No	115 (59)
	Yes	76 (39)
	Unknown/Not available	4 (2.1)
Employment	No	131 (67.2)
	Yes	49 (25.1)
	Unknown/Not available	15 (7.7)
Education	Intermediate school	19 (9.7)
	High school	36 (18.5)
	University degree	96 (49.2)
	None	3 (1.5)
	Unknown/Not available	41 (21)
Residence	Beirut	120 (61.5)
	Mount Lebanon	43 (22.1)
	North	2 (1)
	South	13 (6.7)
	Bekaa	4 (2.1)
	Other Country*	13 (6.7)
Lives	Alone	27 (13.8)
	With family	168 (86.2)
Insurance Coverage	Self-payer**	86 (44.1)
	NSSF***	27 (13.8)
	Private insurance	53 (27.2)
	HIP****	29 (14.9)
Smoking		114 (58.5)
Previous Psychiatric History		159 (81.5)
Psychiatric Medications		145 (74.4)
Previous Psychiatric Hospitalization		67 (34.4)

characteristics of the study population. The mean age was 34.06 ± 13.74, and the median age was 33 with an interquartile range of 23-43. Psychiatric emergencies involved patients of all age groups. Around 7% of those patients belonged to the pediatric age group. Almost two thirds of the study population were females. Most of the patients were from Beirut, and this is justifiable due to the hospital's location; however, patients from all areas of Lebanon and even from other countries presented to this ED with psychiatric emergencies. Among psychiatric emergencies visits, 44.1% were not financially covered by insurance, and patients paid out-of-pocket. Those patients either had no insurance coverage or, more likely, had an insurance that did not cover psychiatry-related complaints.

More than half of the patients were smokers. Among patients presenting with psychiatric emergencies, 81.5% had a previous psychiatric history. Depression was the most common disorder, followed by anxiety disorders (Fig. 1). The proportion of patients who were on psychiatric medications was 74.4%, and those patients were mainly on benzodiazepines (53.8%) and SSRIs (53.8%). Around one third of the patients were previously hospitalized for a psychiatric illness (Table 1).
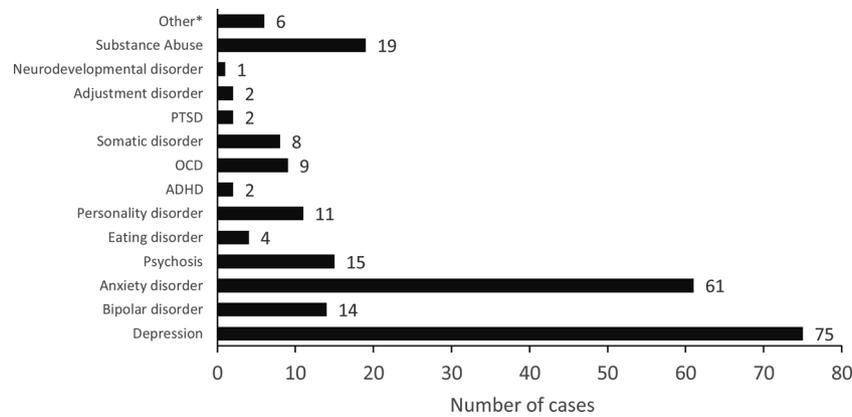
Fig. 1. Preliminary diagnoses of psychiatric emergencies and their associated frequencies. *Other preliminary diagnoses included ODD (obsessive defiant disorder), akathesia, angry reaction, Parkinson's with insomnia, and sexual assault.

Table 2
Association between patient characteristics and dispositional decision.

		Discharge		Admission		P-value
		N = 88	%	N = 107	%	
Age	≤ 18 years	3	3.4	11	10.3	0.064
	≥ 19 years	85	96.6	96	89.7	
Gender	Male	39	44.3	27	25.2	0.005
	Female	49	55.7	80	74.8	
Residence	Beirut	45	51.1	75	70.1	0.041
	Mount Lebanon	23	26.1	20	18.7	
	North	2	2.3	0	0	
	South	9	10.2	4	3.7	
	Bekaa	1	1.1	3	2.8	
	Other Country	8	9.1	5	4.7	
Lives	Alone	10	11.4	17	15.9	0.363
	With family	78	88.6	90	84.1	
Insurance	Self-payer	28	31.8	58	54.2	0.001
	NSSF	9	10.2	18	16.8	
	Private insurance	35	39.8	18	16.8	
	HIP	16	18.2	13	12.1	
Smoking		52	59.1	62	57.9	0.872
Previous medical problems		33	37.5	26	24.3	0.046
Medications		31	35.2	27	25.2	0.129
Previous psychiatric history		71	80.7	88	82.2	0.780
Psychiatric medications		65	73.9	80	74.8	0.886
Previous psychiatric hospitalization		26	29.5	41	38.3	0.199
Involuntary ED admission	No	87	98.9	97	90.7	0.013
	Yes	1	1.1	10	9.3	
Patient brought in by	Family	43	48.9	63	58.9	0.659
	Spouse	16	18.2	16	15.0	
	Friend (s)	4	4.5	5	4.7	
	None	22	25.0	19	17.8	
	Other	3	3.4	4	3.7	
Onset of symptoms	< 1 day	17	19.3	31	29.0	0.235
	1-5 days	30	34.1	24	22.4	
	5-10 days	9	10.2	12	11.2	
	> 10 days	32	36.4	40	37.4	
Suicidal ideations		9	10.2	66	61.7	< 0.001
Suicidal attempt		0	0	38	35.5	< 0.001
Preliminary diagnosis	Depression	24	27.3	51	47.7	0.004
	Bipolar disorder	4	4.5	10	9.3	0.196
	Anxiety disorder	46	52.3	15	14.0	< 0.001
	Psychosis	3	3.4	12	11.2	0.042
	Eating disorder	0	0	4	3.7	0.128
	Personality disorder	2	2.3	9	8.4	0.115
	ADHD	0	0	2	1.9	0.502
	OCD	4	4.5	5	4.7	0.966
	Somatic disorder	4	4.5	4	3.7	0.777
	PTSD	0	0	2	1.9	0.502
	Adjustment disorder	2	2.3	0	0	0.202
	Neurodevelopmental disorder	1	1.1	0	0	0.451
	Substance Abuse	3	3.4	16	15.0	0.007
Concomitant medical problem		1	1.1	13	12.1	0.003

Table 3
Demographic factors and the association with leaving against medical advice (AMA).

		AMA				P-value
		No		Yes		
		N = 160	%	N = 35	%	
Age	≤ 18 years	11	6.9	3	8.6	0.720
	≥ 19 years	149	93.1	32	91.4	
Gender	Male	60	37.5	6	17.1	0.021
	Female	100	62.5	29	82.9	
Marital Status	Single	81	51.3	14	40.0	0.253
	Divorced	15	9.5	2	5.7	
	Married	62	39.2	19	54.3	
Children	No	98	62.4	17	50.0	0.180
	Yes	59	37.6	17	50.0	
Employment	No	110	73.8	21	67.7	0.489
	Yes	39	26.2	10	32.3	
Education	Intermediate school	19	14.4	0	0	0.137
	High school	28	21.2	8	36.4	
	University degree	82	62.1	14	63.6	
	None	3	2.3	0	0	
Residence	Beirut	95	59.4	25	71.4	0.590
	Mount Lebanon	39	24.4	4	11.4	
	North	2	1.3	0	0	
	South	11	6.9	2	5.7	
	Bekaa	3	1.9	1	2.9	
	Other Country	10	6.3	3	8.6	
Lives	Alone	22	13.8	5	14.3	0.934
	With family	138	86.3	30	85.7	
Insurance	No	65	40.6	21	60.0	0.037
	Yes	95	59.4	14	40.0	

Females were more likely to be admitted as compared to males. The association between the other factors (age, living alone, smoking, previous medical history, previous psychiatric history, and previous psychiatric hospitalizations) and the dispositional decision was not shown to be statistically significant. More than half of the patients who required admission had to pay out-of-pocket either because they do not have insurance coverage or, more frequently, because the insurance they have did not cover admission for a psychiatric diagnosis (Table 2).

Factors found to be significantly associated with the decision to admit patients with psychiatric emergencies include an involuntary ED admission, suicidal ideations, suicidal attempt, having depression, having psychosis, or substance abuse. Patients with anxiety disorder were more likely to be discharged (Table 3).

Among all patients who presented with psychiatric emergencies, 17.9% of patients left against medical advice. Among patients who required admission according to the psychiatrist's evaluation, 32.7% left against medical advice (Fig. 2). Female patients and patients with a lack of insurance coverage were more likely to leave AMA (Table 3).

Table 4 shows the multiple logistic regression analysis of dispositional decision with best model (adjusted odds ratios OR, 95% CI, and p-value). Results showed that being a female (OR = 3.042, 95% CI: 1.291–7.171), having family history of psychiatric disease (OR = 2.040, 95% CI: 0.879–4.736), and having suicidal ideations

Table 4
Multiple Logistic Regression Analysis of dispositional disposition with best model (adjusted odds ratios OR, 95% CI, and p-value).

Variables	OR	95%	P-value
Gender (Male)	3.042	1.291 – 7.171	0.011
Female			
Insurance (Self-payer)	0.961	0.284 – 3.251	0.949
NSSF	0.333	0.134 – 0.830	0.018
Private insurance	0.428	0.142 -1.290	0.132
HIP			
Family history of psychiatric disease (No)	2.040	0.879 – 4.736	0.097
Yes			
Preliminary diagnosis: Depression (No)	0.422	0.163 – 1.091	0.075
Yes			
Preliminary diagnosis: Anxiety disorder (No)	0.257	0.110 – 0.600	0.002
Yes			
Suicidal ideations (No)	12.949	4.905 – 34.190	< 0.001
Yes			

(OR = 12.949, 95% CI: 4.905–34.190) were significantly associated with increased hospital admission. On the other hand, having private insurance (OR = 0.333, 95%CI: 0.134 – 0.830), having preliminary diagnosis of depression (OR = 0.422, 95% CI: 0.163–1.019) and anxiety disorder (OR = 0.257, 95% CI: 0.110 – 0.600) were significantly associated with decreased hospital admission.

4. Discussion

Several studies done in the US have evaluated the dispositional determinants of psychiatric patients who present to the ED. Factors found to be most associated with hospitalization were (1) severity of psychotic or depressive symptoms; (2) dangerousness to self (3) lack of impulse control; (4) inability to care for self (Way and Banks, 2001); (5) older age; (6) female gender; and (7) unemployment. In contrast, patients with better psychosocial functioning had lower hospitalization rates (Unick et al., 2011).

In our study, living alone, age, and employment status were not found to be associated with hospitalization. However, gender, being depressed, having suicidal ideations or attempt, substance use, and an involuntary admission to the ED were associated with hospitalization. Interestingly, female gender was a dispositional determinant for admission, yet was also significantly associated with a discharge against medical advice. Moreover, in the literature, drug and alcohol use are associated with a lower probability of admission to the hospital (Unick et al., 2011) but this was not the case in our study, and substance use was found to be significantly associated with a decision to admit patients. This may perhaps be partly explained by the fact that the ED is only one route through which patients seek psychiatric treatment, and substance users may instead be referred for admission through psychiatric clinics.

Attitudes pertaining to mental health and stigma surrounding mental illness are social concepts that take root within specific cultures (Rüsch et al., 2005). In the Arab and Middle Eastern populations, stigma towards people who suffer from mental illness continues to exist
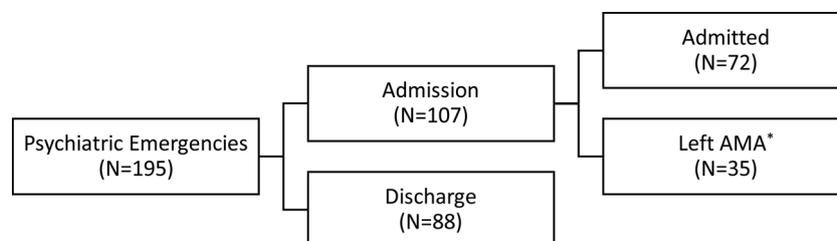

Fig. 2. Disposition of psychiatric emergencies. *AMA: Against Medical Advice.

(Sewilam et al., 2014). This also applies to Lebanon where stigma regarding mental illness and poor awareness continue to be barriers to pursuing professional care (Karam et al., 2006). We therefore believe that the real prevalence of psychiatric emergencies in our population may be higher than what is shown in this study, as patients may be reluctant to seek care as mentioned due to the stigma surrounding mental illness (Hijazi et al., 2011; Karam et al., 2006, 2008); as well as the high cost of the psychiatric treatment (El Majzoub et al., 2018). Interestingly, a recent study investigating determinants of treatment seeking in Lebanon showed that indeed a small number of patients (19.3%) seek help mental health care, and higher educational attainment, a greater income as well as female gender were found to be predictors of positive stances to seeking help and that recognition of mental disorders as well as severity may be more important than stigma in determining care-seeking (Karam et al., 2018).

The percentage of patients seen in the ED for a psychiatric emergency not financially covered by insurance was 44.1%. This was either because patients had no insurance or had an insurance that did not cover psychiatry-related complaints. We could not identify how many of those were denied coverage by their insurance and how many did not have insurance coverage, because in both cases, the patients were labeled as "self-payers" in the medical record. In our study, approximately a third of patients requiring admission to the hospital for psychiatric care were discharged AMA. Specifically, the lack of insurance coverage was significantly associated with AMA discharge. This is consistent with the available data on mental health coverage in Lebanon and contributes to the already existing concerns about coverage and access to mental health treatment (World Health Organization, 2010). Dependence on of out-of-pocket payments is an important obstacle to receiving appropriate mental health care, as it limits services to patients with the means to pay (El Majzoub et al., 2018; Knapp et al., 2006).

There is a lack of targeted budget assignments for mental health in Lebanon; and there is reliance on out-of-pocket expenditure to cover mental health treatment (Yehia et al., 2014). This is also true for other countries with low and middle income (Dixon et al., 2006). A WHO survey of 171 countries showed that around 40% of countries with low and middle income relied primarily on out-of-pocket resources to cover mental health. (World Health Organization, 2001). Access to mental health services is also restricted in Lebanon in comparison to other medical conditions (Yehia et al., 2014).

Moreover, there are differences in mental health coverage across different financing intermediaries in Lebanon, and fragmented and inefficient financing of mental health coverage. For example, there are restrictions on length of stay, age of patients, percent of hospitalization costs covered. More importantly, there is the exclusion of self-harm or suicide attempts. Patients who are most in need of mental health care are therefore refused treatment (Yehia et al., 2014).

The situation in Lebanon seems to be similar to that of other low and middle income countries, where limitations to advancing mental health care pertain to policy making and legislation as well as lack of financing and resources and delays in evidence-based training and adequacy of interventions (Rathod et al.,2017).

Aside from issues pertaining to coverage, the legal framework regulating the disposition of patients in cases suffers from a lack of clarity and the absence of implementary measures in Lebanon, as there is no mental health authority in Lebanon and involuntary admissions are not overseen by a review body; as such in many cases psychiatrists face clinical dilemmas while attempting to promote their patients' best interests. (Kerbage et al., 2016). The dearth of mental health laws and policies to guide mental health services is also a concern in countries of South East Asia and Africa (Breuer et al., 2016).

Understanding the patient journey through the ED in this specific setting is a priority, especially when guidelines are being developed through the efforts of the national mental health program and other stakeholders (Kerbage, 2014).

5. Limitations

Our study has some limitations. It is a single center and retrospective study based on chart review. The charts did not always have complete information regarding all the variables, which might alter our study results. Also, the study patients' MRNs were obtained from the logs of psychiatry residents. Knowing that at the time of the study, the patients' charts were all paper-based and there was no reliable method to track all the patients who had an official psychiatric consultation in the ED. Therefore, the real sample size might be larger than the reported sample size due to possible missed logs, but we estimate that the missed cases were few, if any. Moreover, the study was designed to include the patients who required an official psychiatrist's evaluation; minor complaints that the emergency physician managed, such as simple anxiety attacks, psychiatric medications side effects, and somatization, were not included although they represent psychiatric emergencies, to a certain extent. It would be hard to estimate the number of the latter presentations for the nature of the paper-based medical charts.

6. Conclusions

The emergency department is a main point of contact with healthcare services for patients with psychiatric disorders in Lebanon and globally. Understanding the characteristics of this population, the nature of its clinical presentation and the variety of outcomes available is essential to bridging the gap in service provision. This is particularly important in low and middle income countries where specific cultural and economic factors can prevent direct access to specialist mental health services. For emergency departments to optimize the outcomes of acute psychiatric intervention the hurdles of social stigma, legal uncertainty and deficit in coverage for emergency disposition need to be addressed.

Declarations of interest

None.

Conflict of interest

None.

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